

COMMUNITY NOISE ANALYSIS FOR LOS PORTALES RESIDENTIAL DEVELOPMENT SANTA BARBARA, CALIFORNIA

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This report presents the results of monitoring and computations of the outdoor noise levels at the proposed Los Portales residential development located at 535 East Montecito Street in the City of Santa Barbara, California.

The project site is an approximately square vacant lot of two acres at the west (or northwest) corner of East Montecito Street and Calle Cesar Chaves, in the City of Santa Barbara. The project would consist of 48 condominium units in three levels, with two levels above at grade parking. The residential units would be located in six buildings with driveway and pedestrian access from both East Montecito Street and Calle Cesar Chaves. A common open space area located between buildings in the north center of the project would provide City required outdoor living areas. Residential units would also have small outward-facing french balconies (18 inches deep), but these are not counted in the required outdoor living area for the project.

The southern boundary of the project site is approximately 900 feet north of the center of U.S. Highway 101. Local circulation in the area is provided by East Montecito Street to the south, Calle Cesar Chaves to the east, East Gutierrez Street to the north and Olive Street to the west. Existing land uses in the neighborhood are primarily offices and industrial uses, with limited residential development approximately one block away from the project site.

The dominant noise source in the neighborhood is U.S. Highway 101, with additional noise contributions from the local street network. The project site is partially shielded from these noise sources by the structures near the project site, which range from one to three stories in height. Interior portions of the projects – all residential units that do not front on or face the western, southern, or eastern boundaries of the property – will be shielded from roadway noise by the structures proposed within the project.

Future exterior noise levels along much of the outer perimeter of the site will exceed 60 dBA and, therefore, portions of the outer perimeter of the project would not be suitable for outdoor living use.

Future noise levels at most exterior locations will be at or below 65 dBA. The exception to this result is at the units facing East Montecito Street at the southeast corner of the project, where noise levels will be below 66 dBA. Thus interior noise levels are expected to be 45 dBA or lower with current conventional construction methods assuming that windows and exterior doors are kept closed. A project condition is provided, which specifies forced air circulation for identified units.

Although there are no residential units within close proximity of the project site, industrial and office uses, as well as a community center are nearby. Construction noise has the potential to create a significant noise impact; however, this impact can be mitigated to levels that are less than significant through the implementation of mitigation measures.

2.1 NOISE STANDARDS

The City of Santa Barbara Noise Element (1979) provides a thorough background discussion of noise and its effects on human health and quality of life. For the proposed Los Portales project, the major noise issue involves vehicle traffic and its effects on the exterior and interior noise levels in proposed living areas.

The City Noise Element establishes land use compatibility guidelines in terms of the Day-Night Average Noise Level (L_{dn}) (City of Santa Barbara 1979: page 1.18-1.19). The L_{dn} is based on hourly average noise levels during different times of the day, and includes an adjustment or penalty for noise during nighttime hours (from 10:00 p.m. to 7:00 a.m.). The L_{dn} is defined more completely below. Noise levels used in the standards and measurements described in this report are expressed as decibels, using the “A” weighted frequency response that duplicates the sensitivity of the human ear (abbreviated dBA).

An additional term used in this report and in describing noise standards is “Equivalent Noise Level” or L_{eq} . For a noise of varying loudness over a defined time period, the L_{eq} is the computed constant value that represents the same amount of energy. L_{eq} values are usually expressed for 1-hour periods, as in the hourly average noise levels that are used to define the L_{dn} described above. They may be expressed for longer or shorter time periods, however.

The Noise Element establishes that 60 dBA is the maximum exterior L_{dn} compatible with residential development. For areas where the L_{dn} exceeds 60 dBA, residential project designs must include measures to reduce the L_{dn} in exterior living areas to 60 dBA or less. Such measures can include building setbacks, the construction of earthen berms or the use of noise walls as barriers.

The Noise Element also contains a standard for interior living areas, which must not exceed 45 dBA (City Santa Barbara, 1979:page 16). This standard repeats requirements of the State of California for all multi-family residential units, which are set forth in the State Building Code (Title 24 of the California Code of Regulations, Sections T25-28). Contemporary wood frame construction techniques typically provide up to a 20-25 dBA reduction in exterior to interior noise levels. This value is higher than the 15 dBA reduction commonly assumed in the City of Santa Barbara, but is reasonable given the additional structural means used to comply with the California energy conservation standards that have been implemented in the decades since the City’s Noise Element was prepared. As a result, the 45 dBA interior noise level standard established by California for multi-family housing is routinely achieved when exterior noise levels do not exceed 65 dBA. The state standards also require the preparation of an acoustical report for all multi-family dwellings where the exterior noise levels exceed 60 dBA, to demonstrate that the interior standard will be met.

2.2 NOISE MONITORING RESULTS

As shown in Figure 1, the southern corner of the project site is approximately 900 feet north of the center of U.S. Highway 101. Existing land uses in the neighborhood include a two-story office building (35 feet high) to the west of the site at 509 Montecito Street, and a large two-story office complex to the south along the opposite side of Montecito Street. These two office buildings shield the ground level portions of the project site from much of the highway noise. La Casa de La Raza Community Center is located to the east of the project site at 601 East Montecito Street. Although only a single story, this older industrial building is approximately 20 feet tall, and shields the project site from traffic noise originating on the segment of Montecito Street to the east of the project area. Two-story office and industrial buildings are also located directly north of the project site. These buildings shield the project site from traffic noise originating from East Gutierrez Street.

The dominant noise source in the neighborhood is U.S. Highway 101, but the source of the highway noise is the straight segment approximately 1,200 feet southwest of Montecito Street, not the highway segments nearer to the project site. The highway itself makes a sweeping dogleg curve through downtown Santa Barbara, and the middle tangent portion of this curve is oriented directly along the extension of Montecito Street southwest of the project site. This orientation creates a unique noise environment on the property. The highway noise from the tangent segment is dominated by the tire-roadway interaction, which is reflected or channeled towards Montecito Street by the median and edge barriers on the highway. Very little of the low frequency exhaust component that is typical of highway traffic can be heard on the property. The U.S. 101 bridge over Calle Cesar Chaves is also clearly visible from the project site, about 1,300 feet to the southeast, but there was little or no noise perceivable from this direction.

Noise was monitored from a point near the southwestern (or southern) corner of the property, at a location 45 feet above the existing ground level to simulate the location of an upper story dwelling unit. (The measurements were done in conjunction with an earlier edition of this report that addressed a taller project than the three-story configuration now proposed.) Measurements were made with a Larson-Davis Model 700 sound level meter, which was calibrated at 94 dB and 114 dB before the measurements. The calibration remained unchanged when checked after the measurements. Appendix A contains the results of the noise measurements, in tabular and graphic form, and also contains summaries of traffic counts taken in the area during the period of noise measurements. Excluding the noise of the mechanical boom used to raise and lower the noise meter, during the measurement period the L_{eq} ranged from 61 to 63 dBA. During periods when traffic along U.S. Highway 101 was counted, the L_{eq} values at the measurement point were 61.4 and 61.9 dBA.



Los Portales Noise Study,
Santa Barbara, CA

URS Corporation

Base Photo:
AirPhotoUSA, dated 2000

Figure 1. SITE LOCATION AND VICINITY

The current L_{dn} values at points on the property proposed for residential development range from 59.0 to 64.7 dBA. The modeling procedures used in this determination and the results are discussed below in Potential Impacts.

The modeling and computations for this project were originally prepared in 2005 using the SOUND32 model published by Caltrans (Wood and Hendricks 1983). The SOUND32 model was based on the Federal Highway Administration (FHWA) computational procedures, but used California-specific reference vehicle noise levels. More recently, the FHWA has published a new Transportation Noise Model (TNM 2.5, Lau et al 2004), and Caltrans adopted use of TNM 2.5 in 2006. The newer model uses updated vehicle reference noise levels, and newer algorithms for computing noise reductions with distance and due to barrier effects. Results from TNM 2.5 tend to be slightly lower than those from the older model, given identical inputs. Because this analysis was originally prepared with SOUND32, and since this older model tends to give slightly higher (more conservative) results, the current update for the latest Los Portales design continues to use SOUND32.

3.1 EXTERIOR NOISE LEVELS

The SOUND32 model (Wood and Hendriks 1983) was used to estimate hourly noise levels for traffic on roadways in the project vicinity. Before using the model to compute current noise levels or to predict future noise levels, the traffic counts made during the monitoring period and roadway data were used to adjust and confirm the accuracy of the model. This was necessary because of the unique relationship between U.S. Highway 101 and the project site.

Appendix B contains all of the model input and results, and the first portion of Appendix B contains this information for the “model test.” As shown in the first portion of Appendix B, a drop-off rate of 5 dBA was used between U.S. Highway 101 and the project site—meaning that there is a reduction of 5 dBA for each doubling of distance between the source and receiver. This value was derived in an iterative process, and indicates that for this particular situation the highway tends to act more like a theoretical point source (drop-off rate of 6 dBA per doubling distance) rather than like a theoretical line source (3 dBA per doubling distance). The modeled L_{eq} results are compared with the measured values as shown in Table 1.

TABLE 1
MODEL VS. MEASURED L_{eq} VALUES

Period	Model L_{eq}	Measured L_{eq}
Count 1	61.7	61.4
Count 2	62.4	61.9

As shown above, with the adjustment in drop-off rate the model still slightly over-predicts the L_{eq} .

For the computation of L_{dn} values and analysis of noise impacts, separate determinations were made for the daytime and nighttime hourly L_{eq} values based on estimated traffic volumes for these periods. Then the daytime and nighttime results were combined to compute the L_{dn} , using the following equation:

$$L_{dn} = 10 \cdot \log \left\{ (1/24) \cdot [15 \cdot 10^{L_d/10} + 9 \cdot 10^{(L_n+10)/10}] \right\}$$

Where:

L_{dn} = Day-Night Average Noise Level

L_d = Hourly equivalent noise level for hours during the daytime, 15 hours from 7:00 a.m. to 10:00 p.m.

L_n = Hourly equivalent noise level for hours during the nighttime, 9 hours from 10:00 p.m. to 7:00 a.m.

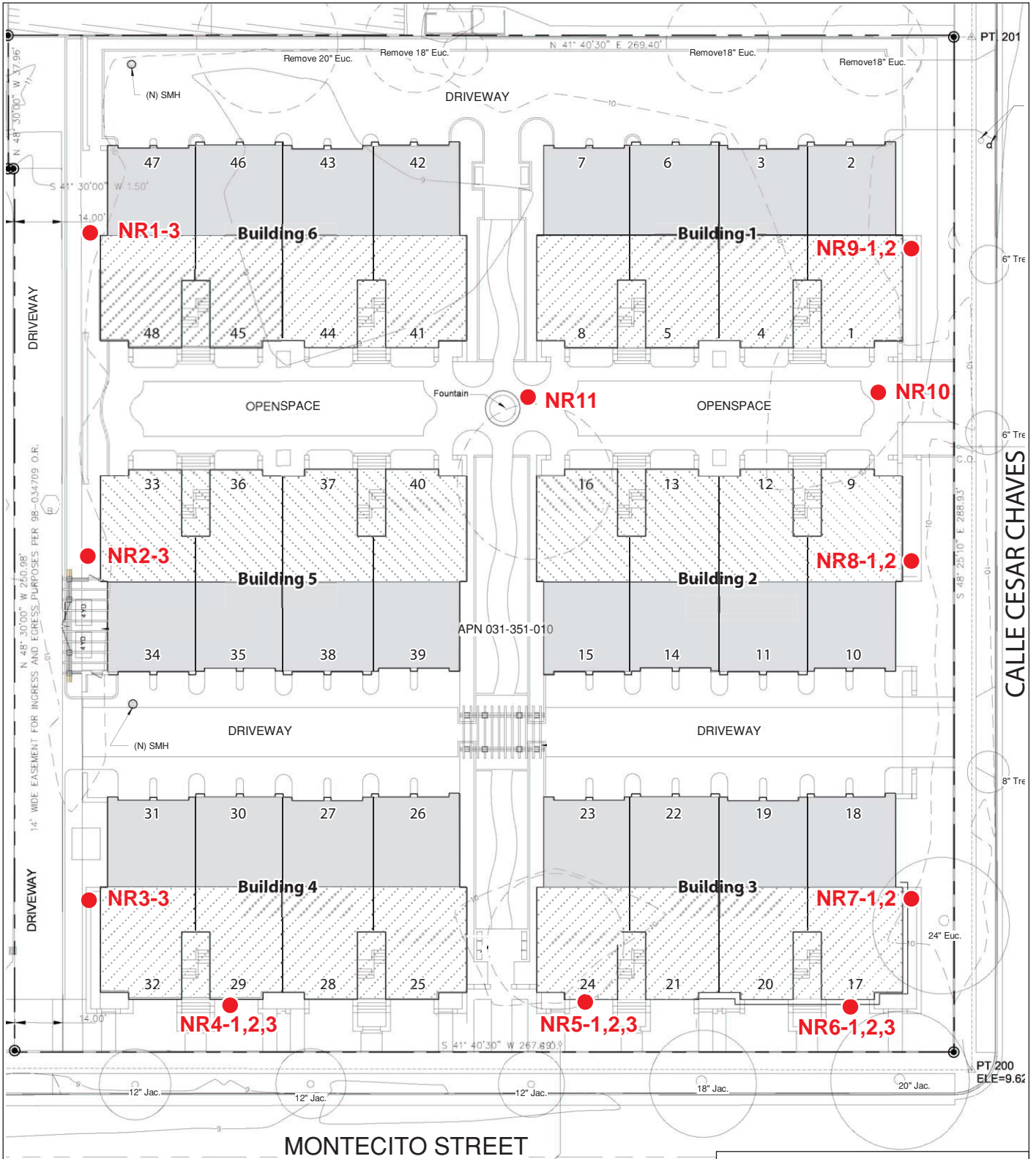
Receiver locations for the model were chosen to represent typical positions along the outside portions of the residential building at various heights. Figure 2 shows the proposed site plan, with the modeled receiver locations. The coordinate system for all components in the model was based on an origin at the northwest corner of the property, with positive x and y values in the south and east directions, respectively. Receiver points are identified as NR1 through NR12, and the second digit indicates the floor or story assumed for that point. For example, NR2-3 indicates a third story elevation at point NR2. Based on the results of analyses for the earlier project configurations, ground floor receivers were not modeled along the western project boundary since these locations are well shielded from freeway noise by the adjacent office building.

L_{dn} values at each receiver were determined for current conditions and future conditions.

Traffic data were obtained from Caltrans and from Associated Transportation Engineers-. Table 2 shows the traffic data for current and future conditions (2015 at the time this report was initially prepared), and the assumptions used for vehicle types and distributions. As noted above, Appendix B contains all of the input data for each model run, done separately for daytime and nighttime periods. Results from the noise model and computation of the L_{dn} values for each receiver location are shown in Table 3, and are summarized in Table 4. The summary results in Table 4 include an additional adjustment for the future period, allowing for additional traffic growth through the year 2022. The adjustment is +0.5 dBA, which was computed based on growth rates for traffic on each roadway that matched the increases between 2003 and 2015.

The results indicate most of the representative receptor sites on the property are currently exposed to L_{dn} values in excess of 60 dBA. The noise levels range from a low of 59 dBA at the northwest corner of the upper level (third story) of the development, to a high of 64.7 dBA at the southeast corner of the ground level of the development. In the future (2022), exterior noise levels at these units are expected to range from 60.6 to 66.2 dBA. Thirteen residential units would be located in the perimeter buildings (Buildings 1, 2, 3 and 4) with their exterior walls exposed to roadway noise levels from East Montecito Street and Calle Cesar Chaves. Another six units would have outward facing balconies exposed to L_{dn} values in excess of 60 dBA originating from the more distant Highway 101 (along the western project boundary). The L_{dn} values above 60 dBA affecting some of the perimeter balconies are not considered a significant impact since these are only 18 inches deep and are not intended for outdoor use. Other units would have windows facing either to the north, away from major traffic noise sources, or facing interior portions of the project in an orientation well-shielded from traffic noise.

Outdoor living for the development includes common open space within a central courtyard running generally east-west in the north central area of the project. The open space area would be well-shielded from local roadway noise by building structures and a partial wall at



Legend

NR4-1,2,3 ● Modeled Noise Receiver Location (No. and Floors)

- Type A-3-Bedroom Townhouse
- Type B-2-Bedroom Townhouse



Quadrangle Location



0 40 80

Approximate Scale in Feet

Las Portales Noise Study,
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Source:
Peikert Group

Figure 2. SITE PLAN AND MODELED
RECEIVER LOCATIONS

TABLE 2
535 EAST MONTECITO STREET ASSUMPTIONS AND CALCULATIONS FOR MODEL TRAFFIC VOLUMES

Street Segment	ADT	Assumptions for			Daytime			Nighttime		
		% Autos	% MT	% HT	Auto/hr	MT/hr	HT/hr	Auto/hr	MT/hr	HT/hr
Test 1										
US 101					6558	216	192			
Calle Cesar Chaves					241	16	3			
E. Montecito St.					132	2	1			
Test 2										
US 101					7752	270	258			
Calle Cesar Chaves					241	16	3			
E. Montecito St.					132	2	1			
Current Conditions										
US 101 ¹	101000	94%	3%	3%	5380	172	172	1582	51	51
Calle Cesar Chaves ²	4500	92%	7%	1%	235	17	3	69	5	1
E. Montecito St. ²	2350	98%	2%	1%	130	2	1	38	1	0
Future Conditions										
US 101 ³	130400	94%	3%	3%	6946	222	222	2043	65	65
Calle Cesar Chaves	5450	92%	7%	1%	284	22	3	84	6	1
E. Montecito St.	2900	97%	2%	1%	159	3	2	47	1	0

ADT = Average Daily Traffic.

Daytime = 7:00 a.m. to 10:00 p.m., 15 hours and 85% of ADT.

Nighttime = 10:00 p.m. to 7:00 a.m., 9 hours and 15% of ADT.

MT = Medium duty trucks (3 axles or less).

HT = Heavy duty trucks (4 axles or more).

¹ ADT from Caltrans website, 2003.

² ADT from Scott Schell, Associated Transportation Engineers, March 9, 2005.

TABLE 2 (CONTINUED)
535 EAST MONTECITO STREET ASSUMPTIONS AND CALCULATIONS FOR MODEL TRAFFIC VOLUMES

³ Future ADT for 2025 (U.S. 101) and 2015 (City streets) from Scott Schell, Associated Transportation Engineers, March 9, 2005. Note that an additional adjustment for future traffic growth to the year 2022 is made below in Table 4.

For US 101, % truck data were obtained from Caltrans, based on 1997 data.

For surface streets, % truck data were estimated based on counts.

TABLE 3
LOS PORTALES NOISE MODEL AND L_{dn} RESULTS

Location	Description	Day dBA	Night dBA	L _{dn} dBA
Model Test - Count 1				
M1	Southwest corner of property, +45AGL (with 5dBA drop-off from US 101)	61.7		
	Measured L _{eq}	61.4		
Model Test Count 2				
M1	Southwest corner of property, +45AGL (with 5dBA drop-off from US 101)	62.4		
	Measured L _{eq}	61.9		
Current Traffic Volumes				
NR1-3	NW corner, west side, 3rd story	56.6	51.3	59.0
NR2-3	mid-west side, 3rd story	58.0	52.7	60.4
NR3-3	SW corner, west side, 3rd story	60.1	54.7	62.4
NR4-1	SW corner, south side, 1st story	60.8	54.7	62.7
NR4-2	SW corner, south side, 2nd story	61.2	55.4	63.3
NR4-3	SW corner, south side, 3rd story	61.3	55.6	63.4
NR5-1	SE corner, south side, 1st story	61.7	55.6	63.6
NR5-2	SE corner, south side, 2nd story	61.4	55.5	63.4
NR5-3	SE corner, south side, 3rd story	61.0	55.3	63.1
NR6-1	SE corner, south side at corner, 1st story	62.7	56.8	64.7
NR6-2	SE corner, south side at corner, 2nd story	62.2	56.4	64.3
NR6-3	SE corner, south side at corner, 3rd story	61.6	56.0	63.8
NR7-1	SE corner, east side, 1st story	61.4	56.2	63.8
NR7-2	SE corner, east side, 2nd story	61.1	55.8	63.5
NR8-1	mid-east side, 1st story	60.8	55.7	63.3
NR8-2	mid-east side, 2nd story	60.5	55.3	62.9
NR9-1	NE corner, east side, 1st story	60.8	55.6	63.2
NR9-2	NE corner, east side, 2nd story	60.4	55.3	62.9
NR10	Open Space, near C. Cesar Chaves	51.5	46.4	54.0
NR11	Open Space near center	49.6	44.3	52.0
Future Traffic (2015), With Project				
NR1-3	NW corner, west side, 3rd story	57.7	52.4	60.1
NR2-3	mid-west side, 3rd story	59.1	53.7	61.4
NR3-3	SW corner, west side, 3rd story	61.3	55.7	63.5
NR4-1	SW corner, south side, 1st story	62.4	55.6	63.9

TABLE 3 (CONTINUED)
LOS PORTALES NOISE MODEL AND L_{dn} RESULTS

Location	Description	Day dBA	Night dBA	L _{dn} dBA
NR4-2	SW corner, south side, 2nd story	62.7	56.4	64.5
NR4-3	SW corner, south side, 3rd story	62.6	56.6	64.6
NR5-1	SE corner, south side, 1st story	63.3	56.3	64.7
NR5-2	SE corner, south side, 2nd story	62.9	56.4	64.6
NR5-3	SE corner, south side, 3rd story	62.4	56.2	64.2
NR6-1	SE corner, south side at corner, 1st story	64.2	57.5	65.7
NR6-2	SE corner, south side at corner, 2nd story	63.5	57.2	65.3
NR6-3	SE corner, south side at corner, 3rd story	62.9	56.8	64.8
NR7-1	SE corner, east side, 1st story	62.3	56.7	64.5
NR7-2	SE corner, east side, 2nd story	61.9	56.4	64.2
NR8-1	mid-east side, 1st story	61.5	56.2	63.9
NR8-2	mid-east side, 2nd story	61.2	55.9	63.6
NR9-1	NE corner, east side, 1st story	61.5	56.2	63.9
NR9-2	NE corner, east side, 2nd story	61.1	55.8	63.5
NR10	Open Space, near C. Cesar Chaves	52.2	47.0	54.6
NR11	Open Space near center	50.7	45.3	53.0

the pedestrian access to Calle Cesar Chaves at its eastern end. The estimated future L_{dn} near the center of the open space is 53.5 dBA, and the future L_{dn} would be approximately 55 dBA near its eastern end. Therefore, the noise levels for this common area would be well below the 60 dBA maximum exterior L_{dn} threshold established by the City of Santa Barbara's Noise Element for outdoor living areas. Perimeter buildings adjacent to Calle Cesar Chaves and East Montecito Street would have entry ways and low planters facing these roadways, but there would be no ground level outdoor living areas along these streets. The garden walls shown on the site plan are provided for architectural detail only and create narrow side yards that are not intended to serve as outdoor living space.

3.2 INTERIOR NOISE LEVELS

With future exterior L_{dn} values expected to range from 60.1 to 65.7 dBA, it should be possible to achieve compliance with the 45 dBA interior noise standard without any special architectural or structural designs. For residential units exposed to exterior L_{dn} values above 60 dBA, however, it may be necessary to keep windows and exterior doors closed. For these units, forced air circulation must be provided. The locations of units expected to have exterior L_{dn} values above 60 dBA are summarized in Section 4.2 below along with a description of the project condition to provide this mitigation measure.

TABLE 4
SUMMARY OF TRAFFIC NOISE IMPACTS

Location No.	Description	Current L _{dn} (dBA)	Future (2022) L _{dn} (dBA)
NR1-3	NW corner, west side, 3rd story	59.0	60.6
NR2-3	mid-west side, 3rd story	60.4	61.9
NR3-3	SW corner, west side, 3rd story	62.4	64.0
NR4-1	SW corner, south side, 1st story	62.7	64.4
NR4-2	SW corner, south side, 2nd story	63.3	64.9
NR4-3	SW corner, south side, 3rd story	63.4	65.0
NR5-1	SE corner, south side, 1st story	63.6	65.2
NR5-2	SE corner, south side, 2nd story	63.4	65.0
NR5-3	SE corner, south side, 3rd story	63.1	64.7
NR6-1	SE corner, south side at corner, 1st story	64.7	66.2
NR6-2	SE corner, south side at corner, 2nd story	64.3	65.8
NR6-3	SE corner, south side at corner, 3rd story	63.8	65.3
NR7-1	SE corner, east side, 1st story	63.8	64.9
NR7-2	SE corner, east side, 2nd story	63.5	64.7
NR8-1	mid-east side, 1st story	63.3	64.3
NR8-2	mid-east side, 2nd story	62.9	64.1
NR9-1	NE corner, east side, 1st story	63.2	64.3
NR9-2	NE corner, east side, 2nd story	62.9	63.9
NR10	Open Space, near C. Cesar Chaves	54.0	55.1
NR11	Open Space near center	52.0	53.5

This table repeats results from Table 3, with an adjustment for future values to account for traffic growth through the year 2022. The adjustment is +0.5 dBA.

3.3 ON-SITE CONSTRUCTION NOISE

Noise levels from heavy equipment used for earth moving during construction typically range from 80-90 dBA at distances of 50 feet. Construction of the project may also involve driving piles to provide a deeper and more stable foundation. Even though its average noise levels are similar to those of other construction operations, the regular impulsive nature of pile driving makes it more noticeable and intrusive than normal construction noise. Typical pile driving operations involve a loud hammering noise lasting for several minutes, followed by a longer period of relative quiet as equipment is moved and set for the next pile. During the pile driving phase of construction, this cycle is repeated throughout the work day. The pile driving phase would occur in the early stages of construction, and would continue for a period of about two weeks.

Existing land uses in the neighborhood are primarily industrial and office space. Office and industrial uses are located to the immediate south, west and north of the project site. The buildings that house these uses are approximately 69, 66 and 20 feet, respectively, from the project site. In addition, a community center, La Casa de la Raza, is located approximately 61 feet to the east of the project site. The proximity of these structures to the project site could lead to significant construction noise impacts. These noise impacts can be mitigated so that they are less than significant. This topic is discussed further in section 4.3.

The closest residential units are approximately 530 feet away from the project site on North Quarantina Street between East Montecito Street and East Gutierrez Street. Due to the distance of the project from residential units, and the noise shielding provided by the intervening structures, construction noise resulting from the project would not have a significant impact on residential units.

4.1 EXTERIOR NOISE LEVELS

The project design provides outdoor living space in a central courtyard where noise levels are not anticipated to exceed 55 dBA. No mitigation is recommended to reduce exterior noise levels at the outer perimeter of the project.

4.2 INTERIOR NOISE LEVELS

With the maximum anticipated exterior L_{dn} at 66.2 dBA, the interior noise standard of 45 dBA should be attainable with conventional construction methods. These would include the use of standard 2 x 6 wall studs, stucco exterior coating, R-10 or R-13 wall insulation, and minimum of ½" interior gypsum wall board. There should be no ventilation or plumbing penetrations through outward facing walls. Exterior doors and windows for these units should be well sealed and should have a sound transmission class rating of 25 to 30 dBA to provide the required interior noise levels. These measures and specifications are typical of common residential structures in California that comply with current state energy conservation standards.

For units located where the exterior L_{dn} is expected to be above 60 dBA, it may also be necessary to keep windows and exterior doors closed in order to achieve the interior L_{dn} limit of 45 dBA. These units should be provided with forced air circulation. The following condition should be applied to the listed units:

- Building plans for the following units shall incorporate forced air circulation. The mechanical ventilation and cooling system shall supply a minimum of two air changes per hour to each habitable room including 20 percent (one-fifth) fresh make-up air obtained directly from the outdoors. The fresh air inlet duct shall be of sound attenuating construction and shall consist of a minimum of ten feet of straight or curved duct or six feet plus one sharp bend. This condition shall apply to the residential units described below in Table 5.

TABLE 5
LOCATIONS OF UNITS WITH EXTERIOR NOISE LEVELS ABOVE 60 dBA

Location	Units Affected ($L_{dn} > 60\text{dBA}$)
Fronting or facing E. Montecito Street	Units 17, 20, 21, 24, 25, 28, 29, 32 (Buildings 3 & 4)
Adjacent to Calle Cesar Chaves	Units 1, 2, 9, 10, 18 (Buildings 1, 2, & 3)
Adjacent to western project boundary	Units 31, 33, 34, 47, 48 (Buildings 4, 5 & 6)

This condition may be altered with submittal of an acoustical engineering report, in conjunction with a building permit application, which documents an alternative building

design that achieves a minimum 25 dBA interior-to-exterior noise reduction with windows in a partial open condition.

4.3 CONSTRUCTION NOISE

Even though construction noise is a common and expected occurrence, the close proximity of office buildings and a neighborhood community center warrant measures to help minimize the potential for noise impacts from grading and construction noise within the project site. Typical conditions imposed by the City for such projects include prohibiting noise generating construction activity on Saturdays, Sundays, and holidays between the hours of 5 p.m. to 8 a.m. (City of Santa Barbara, 2004). This measure, however, is clearly aimed at minimizing noise in predominantly residential areas. The City Noise Ordinance prohibits loud construction noise during nighttime hours, defined as between 8:00 p.m. and 7:00 a.m. the next day. Given the nature of the surrounding neighborhood, appropriate restrictions would include the following:

- Construction activities are allowed between the hours of 7:00 a.m. and 8:00 p.m., Mondays through Saturdays, unless a special permit for extended hours has been applied for and granted by the Chief of Building and Zoning, pursuant to Section 9.16.015 of the Municipal Code.
- All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices.
- Staging and equipment areas shall be sited to minimize noise effects to residential and other noise-sensitive land uses. Temporary noise barriers shall be provided around the construction site as necessary to avoid extended disturbance to neighbors from construction noise.

These measures will not eliminate construction noise, but will minimize the potential for significant impacts.

4.4 CONCLUSION

Exterior noise levels in the common open space areas within the project will have noise levels below 55 dBA (L_{dn}), well below the City of Santa Barbara standard of 60 dBA for outdoor living areas. Interior noise levels at the project site are expected to be in compliance with the 45 dBA noise thresholds for interior areas established in the City of Santa Barbara's Noise Element with the inclusion of the identified mitigation measure. Some units along the outside perimeter of the project may require forced air circulation systems to allow residents to keep windows and doors closed. A project approval condition is provided that identifies the specific units and describes the circulation system required. Construction noise could result in a significant noise impact; however, with the inclusion of the above measures

(Section 4.3), implemented through conditions on the site plan approval, significant noise impacts can be mitigated. Inspection or monitoring during project construction can ensure that construction noise effects are minimized as required.

This report was prepared by URS Corporation. The primary author was John Larson. Joseph Czech, P.E., reviewed numerical results and conclusions. Rachael Grossman assisted with fieldwork and traffic counts. The report was originally prepared in April 2005, and was then modified in December 2005, April 2006, and February 2007. This final report contains all of the information from the earlier versions and can be read independently.

The following references and sources were used in completing the analysis in this report.

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Appendix A

Los Portales (535 E. Montecito), Noise Measurements

Minute No.	Time	LVL	Lmin	Lmax	Lpk	L10	L33	L50	L90
(boom) 1	11:38:45	72.5	50	83.5	97	76.5	73	70	53.5
(boom) 2	11:39:45	73.5	57	95	110.5	76	73	67	60
3	11:40:45	61	56	77	83.5	62.5	61	60.5	58.5
4	11:41:45	61	56	67.5	79	63.5	62	61	58.5
5	11:42:45	61.5	56	68	77.5	63.5	62	61	58.5
6	11:43:45	61	56	67.5	77.5	63	61.5	61	59
7	11:44:45	61.5	56	68	81	63.5	61.5	61	59
8	11:45:45	62	56.5	66.5	76.5	64	62.5	62	59.5
9	11:46:45	62.5	57	70.5	78	64.5	62	61.5	59.5
10	11:47:45	62	57.5	70.5	78	64	62	61.5	59.5
11	11:48:45	64	59.5	69	78	66	64.5	64	62
12	11:49:45	65	60	70.5	82.5	66.5	65	64.5	62.5
13	11:50:45	65	60	71.5	83.5	67	65	64	62.5
14	11:51:45	64	59.5	68	79	66	64.5	64	62.5
15	11:52:45	63.5	59	68.5	87.5	65	63.5	63	61.5
16	11:53:45	63.5	58.5	72	86	65.5	63.5	63	61
17	11:54:45	64.5	60	69.5	81.5	66.5	65	64	62.5
18	11:55:45	64	58	70.5	81.5	66.5	64	63.5	61
19	11:56:45	62.5	58.5	68	77	64	62.5	62	60.5
20	11:57:45	63	59	73	79.5	64.5	63	62.5	60.5
21	11:58:45	65	59.5	71.5	81.5	67.5	65	64	61.5
22	11:59:45	63	57.5	68.5	77.5	65	63.5	62.5	60
23	12:00:45	63	58	69	80.5	64.5	63	62.5	60.5
24	12:01:45	62.5	58.5	67.5	77.5	64.5	62.5	62	60
25	12:02:45	62	57.5	67	76	64	62.5	62	60
(Count 1) 26	12:03:45	63	58.5	68	79	65	63.5	63	60.5
27	12:04:45	66.5	59	74	83.5	69.5	65.5	65	63
28	12:05:45	63	59	68	77	64	63	62.5	61
29	12:06:45	63	57	68.5	78.5	65	63	62.5	60
30	12:07:45	62.5	58.5	67	76.5	64	63	62	60.5
31	12:08:45	62.5	56.5	77.5	89.5	64	62.5	61.5	59
32	12:09:45	62.5	57	71.5	81.5	64.5	62.5	61.5	60
33	12:10:45	59.5	55	65.5	75	61.5	59.5	59	57.5
34	12:11:45	60	55.5	68.5	77.5	62	60.5	59.5	57.5
35	12:12:45	59.5	55.5	66	73.5	61	59.5	59	57
36	12:13:45	61	55.5	66	78.5	63	61.5	60.5	58.5
37	12:14:45	59.5	53.5	65.5	75	61	59.5	59	57
38	12:15:45	60	54.5	71	80	62	60	59.5	57.5
39	12:16:45	61	56	67	76.5	63.5	61.5	60.5	57.5
40	12:17:45	60	54	69	78.5	62	60.5	59.5	57
41	12:18:45	59.5	55	64	74	61	59.5	59	57
42	12:19:45	59.5	54.5	69	78	61.5	59.5	58.5	57
43	12:20:45	59	54.5	64.5	75	61	59.5	59	56.5
44	12:21:45	60	54	67	76	62.5	60.5	59.5	57.5
45	12:22:45	59.5	54.5	66	76	61.5	60	59	57
46	12:23:45	59	52.5	66	76.5	61.5	59.5	58	55

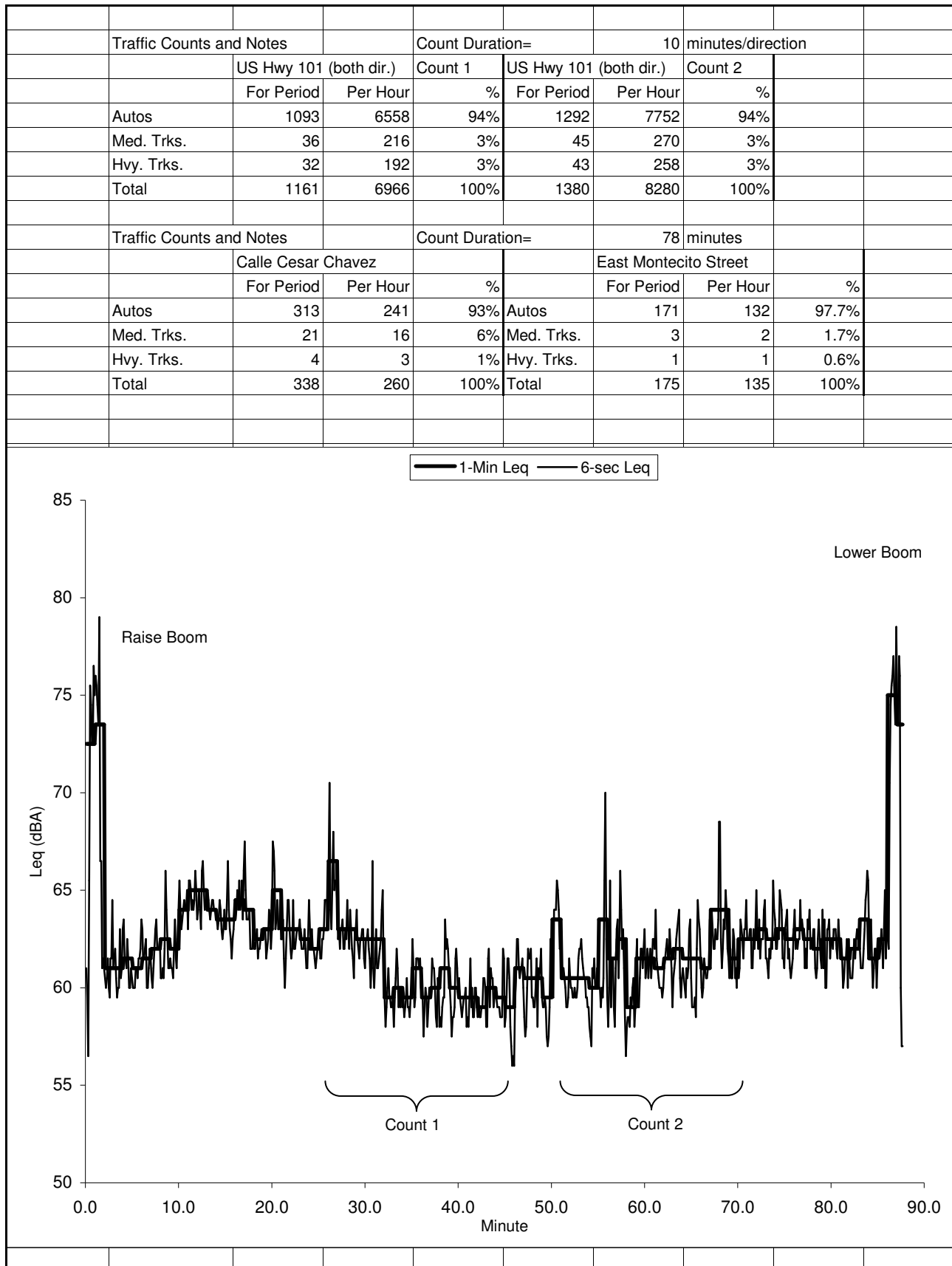
Appendix A

Los Portales (535 E. Montecito), Noise Measurements

Minute No.	Time	LVL	Lmin	Lmax	Lpk	L10	L33	L50	L90
47	12:24:45	61	56	65	76.5	63	61.5	61	59
48	12:25:45	60.5	54.5	66	78	62.5	61	60	57
49	12:26:45	60.5	55	66.5	76	62.5	60.5	59.5	57.5
50	12:27:45	59.5	54.5	64.5	80.5	62	59.5	59	56.5
51	12:28:45	63.5	56	69	80.5	66	64	62.5	59
(Count 2) 52	12:29:45	60.5	54.5	65.5	76.5	62	61	60	58
53	12:30:45	60.5	55.5	64.5	76	62	60.5	60	58
54	12:31:45	60.5	55	66.5	75.5	62.5	61	60	58
55	12:32:45	60	53	65	77	62.5	60.5	59.5	56.5
56	12:33:45	63.5	56	73.5	81.5	67.5	61.5	60.5	58
57	12:34:45	61.5	54.5	75.5	80	63.5	61	59.5	57
58	12:35:45	62.5	51.5	74	82	65	62.5	61	57.5
59	12:36:45	59	54	62.5	74	61	59.5	58.5	56.5
60	12:37:45	61.5	56	72	84	63.5	61.5	61	58.5
61	12:38:45	61.5	57	71.5	85	63	62	61	59
62	12:39:45	61	55	66.5	77.5	63.5	61.5	60.5	58
63	12:40:45	61.5	56.5	67.5	78.5	64	62	61	59
64	12:41:45	62	57	68	77	64	62.5	61.5	59
65	12:42:45	61.5	56.5	68.5	82.5	63	61.5	60.5	58.5
66	12:43:45	61.5	55	68	76.5	64	62	60	58
67	12:44:45	61	56.5	69.5	80.5	63	61	60.5	58.5
68	12:45:45	64	59	74	79.5	66	63.5	62.5	60.5
69	12:46:45	64	57.5	73	81	66.5	63.5	62.5	60.5
70	12:47:45	61.5	56.5	68.5	78	63.5	61.5	60.5	59
71	12:48:45	62.5	57.5	69	78.5	65	63	62	60
72	12:49:45	62.5	58	72	81.5	64.5	63	62	60
73	12:50:45	63	58.5	68	78.5	65	63	62.5	60.5
74	12:51:45	62.5	57.5	74.5	84.5	64.5	62.5	61.5	59.5
75	12:52:45	63	57.5	72	83	65.5	63	62	60
76	12:53:45	62.5	56	70.5	78.5	64.5	62.5	61.5	59
77	12:54:45	63	57.5	71.5	80	65.5	63	62.5	60
78	12:55:45	62.5	58	75.5	83.5	64	62.5	61.5	59.5
79	12:56:45	62	57	71.5	77	64	62.5	61.5	60
80	12:57:45	62.5	56.5	71.5	81.5	64.5	62.5	61.5	59
81	12:58:45	62.5	58	68.5	80	65	62.5	62	60
82	12:59:45	61.5	56	70.5	78	63.5	61.5	60.5	58
83	13:00:45	62	56.5	67	77	64	62.5	61.5	59
84	13:01:45	63.5	58	69.5	79.5	66	64	62.5	60
85	13:02:45	61.5	57	67	76	63.5	62	61.5	59
86	13:03:45	62.5	58	68	79	64.5	63	62	60
(boom) 86	13:04:45	75	56.5	89.5	112	78.5	74.5	73	61.5
(boom) 87	13:05:45	73.5	51.5	84	108	77	73.5	69.5	54
Notes:	Shaded times were affected by raising and lowering boom noise.								
	Bolded times correspond to traffic count periods on U.S. 101 (on next page).								

Appendix A

Los Portales (535 E. Montecito), Noise Measurements



Appendix B

Las Portales Input and Results Files for SOUND32 Model

	Page
Test 1	
Input	1
Results	3
Test 2	
Input	4
Results	4
Current, Daytime	
Input	5
Results	9
Current, Nighttime	
Input	10
Results	11
Future, Daytime	
Input	12
Results	13
Future, Nighttime	
Input	14
Results	15

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : EMT1.S32
 BARRIER COST FILE : CALIF\$.DTA
 DATE : 03-08-2005

EMT1

TEST 1

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	6558 55	216 55	192 55	US 101 Test 1
2	241 25	16 25	3 25	Calle Cesar Chavez Test 1
3	132 25	2 25	1 25	E Montecito Test 1

=====

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION
1	1	NO	1060.0	174.2	27.0	1
	2	NO	682.4	-232.3	15.0	2
	3	NO	412.4	-595.3	14.0	3
	4	NO	246.8	-1045.4	18.0	4
			214.9	-1437.5	17.0	5
2	1	NO	-528.5	284.6	9.6	1
			1045.4	284.6	8.8	2
3	1	NO	275.9	775.4	9.7	1
			293.3	-493.7	7.5	2

=====

BARRIER DATA

Barrier No. 1 Description: Adj. Office 509 E Montecito
 Type - (2)MASONRY
 Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	116.2	-214.9	9.0	39.0 *1	* 30
2	261.4	-214.9	9.0	39.0 *2	* 30
3	255.6	-61.0	9.0	39.0 *3	* 30
4	130.7	-61.0	9.0	39.0 *4	* 30
5	130.7	-130.7	9.0	39.0 *5	* 30
	116.2	-130.7	9.0	39.0 *6	* 30

Barrier No. 2 Description: Tri Counties Ctr 520 E Mont
 Type - (2)MASONRY
 Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	334.0	-217.8	10.0	30.0 *1	* 20
2	438.5	-217.8	10.0	30.0 *2	* 20
3	441.4	122.0	10.0	30.0 *3	* 20
4	528.5	122.0	10.0	30.0 *4	* 20
5	528.5	203.3	10.0	30.0 *5	* 20
	319.4	197.5	10.0	30.0 *6	* 20

Barrier No. 3 Description: `601 E Montecito
 Type - (2)MASONRY
 Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	84.2	293.3	9.5	29.5 *1	* 20
2	246.8	290.4	9.5	29.5 *2	* 20
3	246.8	435.6	9.5	29.5 *3	* 20
	81.3	371.7	9.5	29.5 *4	* 20

RECEIVER DATA

REC. NO.	X	Y	Z	DNL PEOPLE	ID
1	250.0	12.0	49.0	67 500	M1

DROP-OFF RATES

LANE	RECEIVER
NO.	1
1	5.0
2	3.0
3	3.0

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

SOUND32 - RELEASE 07/30/91

TITLE:
EMT1

TEST 1 RESULTS

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	M1	67.	500.	61.7

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : EMT2.S32
BARRIER COST FILE : CALIF\$.DTA
DATE : 03-08-2005

EMT2

TEST 2

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	7752 55	270 55	258 55	US 101 Test 2
2	241 25	16 25	3 25	Calle Cesar Chavez Test 1
3	132 25	2 25	1 25	E Montecito Test 1

=====

LANE DATA

[same as Test 1]

=====

BARRIER DATA

[same as Test 1]

=====

RECEIVER DATA

[same as Test 1]

=====

DROP-OFF RATES

[same as Test 1]

=====

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

=====

SOUND32 - RELEASE 07/30/91

TITLE:
EMT2

TEST 2 RESULTS

REC	REC ID	DNL	PEOPLE	LEQ (CAL)
1	M1	67.	500.	62.4

=====

INPUT DATA FILE : LPCD.S32
BARRIER COST FILE : CALIF\$.DTA
DATE : 12-06-2006

Las Portales 11/06

CURRENT DAY

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	5380 55	172 55	172 55	current day
2	235 25	17 25	3 25	current day
3	130 25	2 25	1 25	current day

=====

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION
1	1	NO	1060.0	174.2	27.0	1
	2	NO	682.4	-232.3	15.0	2
	3	NO	412.4	-595.3	14.0	3
	4	NO	246.8	-1045.4	18.0	4
			214.9	-1437.5	17.0	5
2	1	NO	-528.5	284.6	9.6	1
			1045.4	284.6	8.8	2
3	1	NO	275.9	775.4	9.7	1
			293.3	-493.7	7.5	2

=====

BARRIER DATA

Barrier No. 1 Description: No. 1 Office 509 E Montecito
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	116.2	-214.9	9.0	39.0	*B1 P1 * 30
2	261.4	-214.9	9.0	39.0	*B1 P2 * 30
3	255.6	-61.0	9.0	39.0	*B1 P3 * 30
4	130.7	-61.0	9.0	39.0	*B1 P4 * 30
5	130.7	-130.7	9.0	39.0	*B1 P5 * 30
	116.2	-130.7	9.0	39.0	*B1 P6 * 30

Barrier No. 2 Description: No. 2 Tri Counties Ctr 520 E
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	334.0	-217.8	10.0	30.0 *B2 P1	* 20
2	438.5	-217.8	10.0	30.0 *B2 P2	* 20
3	441.4	122.0	10.0	30.0 *B2 P3	* 20
4	528.5	122.0	10.0	30.0 *B2 P4	* 20
5	528.5	203.3	10.0	30.0 *B2 P5	* 20
	319.4	197.5	10.0	30.0 *B2 P6	* 20

Barrier No. 3 Description: No 3 601 E Montecito
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	84.2	293.3	9.5	29.5 *B3 P1	* 20
2	246.8	290.4	9.5	29.5 *B3 P2	* 20
3	246.8	435.6	9.5	29.5 *B3 P3	* 20
	81.3	371.7	9.5	29.5 *B3 P4	* 20

Barrier No. 4 Description: New Bldg. B1 NW corner
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	30.0	27.0	9.0	39.0 *B4 P1	* 30
2	30.0	126.0	9.0	39.0 *B4 P2	* 30
3	84.0	126.0	9.0	39.0 *B4 P3	* 30
4	84.0	24.0	9.0	39.0 *B4 P4	* 30
	30.0	27.0	9.0	39.0 *B4 P5	* 30

Barrier No. 5 Description: New Bldg. C1 NE corner
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	30.0	149.0	9.0	39.0 *B5 P1	* 30
2	30.0	246.0	9.0	39.0 *B5 P2	* 30
3	84.0	249.0	9.0	39.0 *B5 P3	* 30
4	84.0	148.0	9.0	39.0 *B5 P4	* 30
	30.0	149.0	9.0	39.0 *B5 P5	* 30

Barrier No. 6 Description: New Bldg. A1 middle west
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	120.0	24.0	9.0	39.0 *B6 P1	* 30
2	120.0	128.0	9.0	39.0 *B6 P2	* 30
3	176.0	126.0	9.0	39.0 *B6 P3	* 30
4	176.0	26.0	9.0	39.0 *B6 P4	* 30
	120.0	24.0	9.0	39.0 *B6 P5	* 30

Barrier No. 7 Description: New Bldg. B2 middle east
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	120.0	147.0	9.0	39.0 *B7 P1	* 30
2	120.0	249.0	9.0	39.0 *B7 P2	* 30
3	178.0	247.0	9.0	39.0 *B7 P3	* 30
4	178.0	150.0	9.0	39.0 *B7 P4	* 30
	120.0	147.0	9.0	39.0 *B7 P5	* 30

Barrier No. 8 Description: New Bldg. B3 SW corner
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	212.0	26.0	9.0	39.0 *B8 P1	* 30
2	212.0	126.0	9.0	39.0 *B8 P2	* 30
3	265.0	126.0	9.0	39.0 *B8 P3	* 30
4	265.0	24.0	9.0	39.0 *B8 P4	* 30
	212.0	26.0	9.0	39.0 *B8 P5	* 30

Barrier No. 9 Description: New Bldg A2 SE corner
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	212.0	149.0	9.0	39.0 *B9 P1	* 30
2	212.0	248.0	9.0	39.0 *B9 P2	* 30
3	268.0	249.0	9.0	39.0 *B9 P3	* 30
4	268.0	148.0	9.0	39.0 *B9 P4	* 30
	212.0	149.0	9.0	39.0 *B9 P5	* 30

Barrier No. 10 Description: Wall at Ped. entrance
Type - (2)MASONRY
Height Increment (DELZ)= 0.0 No. Height Changes (P)=0

SEG.	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	88.0	248.0	9.0	16.0	*B10 P1 * 7
2	100.0	248.0	9.0	16.0	*B10 P2 * 7
3	107.0	248.0	9.0	16.0	*B10 P3 * 7
	119.0	248.0	9.0	16.0	*B10 P4 * 7

RECEIVER DATA

REC. NO.	X	Y	Z	DNL	PEOPLE	ID
1	60.0	22.0	34.0	67	500	NR1-3
2	150.0	20.0	34.0	67	500	NR2-3
3	240.0	20.0	34.0	67	500	NR3-3
4	270.0	65.0	14.0	67	500	NR4-1
5	270.0	65.0	24.0	67	500	NR4-2
6	270.0	65.0	34.0	67	500	NR4-3
7	273.0	160.0	14.0	67	500	NR5-1
8	273.0	160.0	24.0	67	500	NR5-2
9	273.0	160.0	34.0	67	500	NR5-3
10	273.0	235.0	14.0	67	500	NR6-1
11	273.0	235.0	24.0	67	500	NR6-2
12	273.0	235.0	34.0	67	500	NR6-3
13	240.0	253.0	14.0	67	500	NR7-1
14	240.0	253.0	24.0	67	500	NR7-2
15	150.0	252.0	14.0	67	500	NR8-1
16	150.0	252.0	24.0	67	500	NR8-2
17	60.0	252.0	14.0	67	500	NR9-1
18	60.0	252.0	24.0	67	500	NR9-2
19	100.0	240.0	14.0	67	500	NR10-1
20	100.0	145.0	14.0	67	500	NR11-1

DROP-OFF RATES

LANE							RECEIVER							
NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

LANE							RECEIVER							
NO.	15	16	17	18	19	20								
1	5.0	5.0	5.0	5.0	5.0	5.0								
2	3.0	3.0	3.0	3.0	3.0	3.0								
3	3.0	3.0	3.0	3.0	3.0	3.0								

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

Las Portales 11/06

CURRENT DAY RESULTS

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	NR1-3	67.	500.	56.6
2	NR2-3	67.	500.	58.0
3	NR3-3	67.	500.	60.1
4	NR4-1	67.	500.	60.8
5	NR4-2	67.	500.	61.2
6	NR4-3	67.	500.	61.3
7	NR5-1	67.	500.	61.7
8	NR5-2	67.	500.	61.4
9	NR5-3	67.	500.	61.0
10	NR6-1	67.	500.	62.7
11	NR6-2	67.	500.	62.2
12	NR6-3	67.	500.	61.6
13	NR7-1	67.	500.	61.4
14	NR7-2	67.	500.	61.1
15	NR8-1	67.	500.	60.8
16	NR8-2	67.	500.	60.5
17	NR9-1	67.	500.	60.8
18	NR9-2	67.	500.	60.4
19	NR10-1	67.	500.	51.5
20	NR11-1	67.	500.	49.6

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : LPCN.S32
BARRIER COST FILE : CALIF\$.DTA
DATE : 12-06-2006

Las Portales 11/06

CURRENT NIGHT

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	1582 55	51 55	51 55	current night
2	69 25	5 25	1 25	current night
3	38 25	1 25	0 25	current night

=====

LANE DATA

[SAME AS CURRENT DAY]

=====

BARRIER DATA

[SAME AS CURRENT DAY]

=====

RECEIVER DATA

[SAME AS CURRENT DAY]

=====

DROP-OFF RATES

[SAME AS CURRENT DAY]

=====

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

=====

CURRENT NIGHT RESULTS

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

Las Portales 11/06

REC	REC ID	DNL	PEOPLE	LEQ (CAL)
1	NR1-3	67.	500.	51.3
2	NR2-3	67.	500.	52.7
3	NR3-3	67.	500.	54.7
4	NR4-1	67.	500.	54.7
5	NR4-2	67.	500.	55.4
6	NR4-3	67.	500.	55.6
7	NR5-1	67.	500.	55.6
8	NR5-2	67.	500.	55.5
9	NR5-3	67.	500.	55.3
10	NR6-1	67.	500.	56.8
11	NR6-2	67.	500.	56.4
12	NR6-3	67.	500.	56.0
13	NR7-1	67.	500.	56.2
14	NR7-2	67.	500.	55.8
15	NR8-1	67.	500.	55.7
16	NR8-2	67.	500.	55.3
17	NR9-1	67.	500.	55.6
18	NR9-2	67.	500.	55.3
19	NR10-1	67.	500.	46.4
20	NR11-1	67.	500.	44.3

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : LPFD.S32
BARRIER COST FILE : CALIF\$.DTA
DATE : 12-06-2006

Las Portales 11/06

FUTURE DAY

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	6946 55	222 55	222 55	future day
2	284 25	22 25	3 25	future day
3	159 25	3 25	2 25	future day

=====

LANE DATA

[SAME AS CURRENT DAY]

=====

BARRIER DATA

[SAME AS CURRENT DAY]

=====

RECEIVER DATA

[SAME AS CURRENT DAY]

=====

DROP-OFF RATES

[SAME AS CURRENT DAY]

=====

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

=====

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

Las Portales 11/06

FUTURE DAY RESULTS

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	NR1-3	67.	500.	57.7
2	NR2-3	67.	500.	59.1
3	NR3-3	67.	500.	61.3
4	NR4-1	67.	500.	62.4
5	NR4-2	67.	500.	62.7
6	NR4-3	67.	500.	62.6
7	NR5-1	67.	500.	63.3
8	NR5-2	67.	500.	62.9
9	NR5-3	67.	500.	62.4
10	NR6-1	67.	500.	64.2
11	NR6-2	67.	500.	63.5
12	NR6-3	67.	500.	62.9
13	NR7-1	67.	500.	62.3
14	NR7-2	67.	500.	61.9
15	NR8-1	67.	500.	61.5
16	NR8-2	67.	500.	61.2
17	NR9-1	67.	500.	61.5
18	NR9-2	67.	500.	61.1
19	NR10-1	67.	500.	52.2
20	NR11-1	67.	500.	50.7

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : LPFN.S32
BARRIER COST FILE : CALIF\$.DTA
DATE : 12-06-2006

Las Portales 11/06

FUTURE NIGHT

=====

TRAFFIC DATA

LANE NO.	AUTO VPH MPH	MEDIUM TRKS VPH MPH	HEAVY TRKS VPH MPH	DESCRIPTION
1	2043 55	65 55	65 55	future night
2	84 25	6 25	1 25	future night
3	47 25	1 25	0 25	future night

=====

LANE DATA

[SAME AS CURRENT DAY]

=====

BARRIER DATA

[SAME AS CURRENT DAY]

=====

RECEIVER DATA

[SAME AS CURRENT DAY]

=====

DROP-OFF RATES

[SAME AS CURRENT DAY]

=====

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

=====

FUTURE NIGHT RESULTS

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

Las Portales 11/06

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	NR1-3	67.	500.	52.4
2	NR2-3	67.	500.	53.7
3	NR3-3	67.	500.	55.7
4	NR4-1	67.	500.	55.6
5	NR4-2	67.	500.	56.4
6	NR4-3	67.	500.	56.6
7	NR5-1	67.	500.	56.3
8	NR5-2	67.	500.	56.4
9	NR5-3	67.	500.	56.2
10	NR6-1	67.	500.	57.5
11	NR6-2	67.	500.	57.2
12	NR6-3	67.	500.	56.8
13	NR7-1	67.	500.	56.7
14	NR7-2	67.	500.	56.4
15	NR8-1	67.	500.	56.2
16	NR8-2	67.	500.	55.9
17	NR9-1	67.	500.	56.2
18	NR9-2	67.	500.	55.8
19	NR10-1	67.	500.	47.0
20	NR11-1	67.	500.	45.3